

NOTE ON A GNATHOBDELLID LEECH [*LIMNATIS* SP. ?]
FROM ANGOLA.

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I OWE to Prof. G. H. F. Nuttall and Mr A. E. Shipley the opportunity of examining three specimens of a West African leech sent by Dr C. Wellman from Benguella, Angola. They were described as land leeches 'taken four or five miles from any water' and were preserved in alcohol. A brown, vermiform object protruded from the mouth of the largest specimen.

Transverse sections of this object revealed muscular tissue but gave no further indications of its nature. Many leeches [e.g., *Trocheta*; *Aulastoma*, Moq. Tand.] are known to leave the water voluntarily in search of food such as worms and molluscs, and it may be assumed with some certainty that this specimen possessed similar habits and had been killed in the act of devouring its prey.

Diagnostic characters.

The body resembles *Hirudo* in form, except that, anteriorly, it tapers rather more rapidly. The following measurements were taken:

Largest specimen: 51.4 mm. long and 9.7 mm. in width.

Smallest specimen: 26 mm. long and 5.60 mm. in width.

The acetabulum is circular and of moderate size.

The colour is brownish-grey without any trace of pattern or coloured spots, rather paler on the ventral surface. There is an ill-defined, median, dull yellow tract on the dorsal side, following the course of the alimentary canal.

Eyes 10; arranged, as in *Hirudo*, on the 1st, 2nd, 3rd, 5th and 8th annuli [Fig. 2]. The first three pairs are distinct, the fourth pair less apparent, the fifth pair almost imperceptible. They are best seen on the smallest specimen.

Annuli 102; counting from the first pair of eyes to the acetabulum. The 5th and 6th [the buccal annuli of Whitman] are united ventrally to form the first ventral ring; the 6th and 7th are united ventrally to form the second ventral ring [Fig. 1]. The annuli have a shallow, median wrinkle, parallel to their sides, which

is sometimes split up into subsidiary wrinkles. This feature may be due to contraction in alcohol.

The large and prominent anus lies in the 102nd annulus, causing it to become double [Fig. 4].

The genital apertures are five rings apart, small and difficult to see. The male orifice lies between the 31st and 32nd annuli; the rather larger female orifice lies between the 36th and 37th annuli.

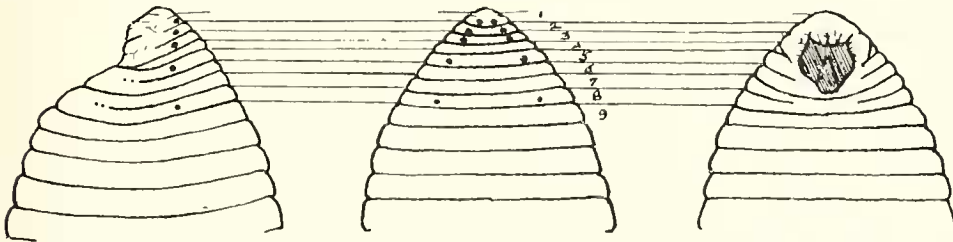


Fig. 1. Side view.

Fig. 2. Dorsal.

Fig. 3. Ventral.

Diagrams showing eyes and anterior rings.

The horizontal lines connecting the figures define the annulations which are numbered 1—9 in the middle figure (annulation 1, indicated by a broken line, was indistinct).

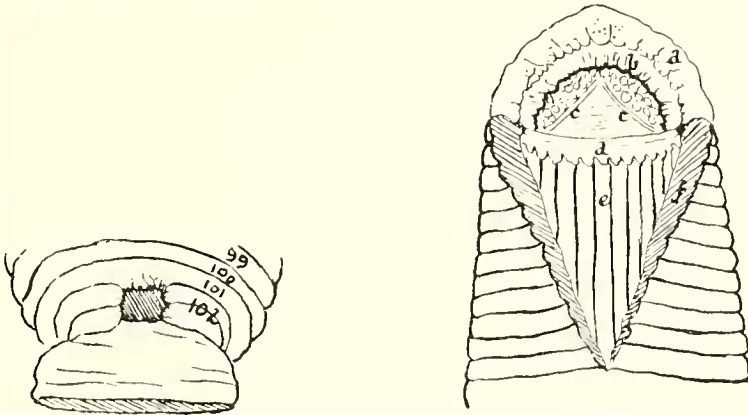


Fig. 4.

Fig. 5.

Fig. 4. Dorsal aspect of posterior rings and acetabulum.

Fig. 5. Diagram of ventral surface of anterior sucker.

- a. Outer lip.
- b. Its inner, crenulate border.
- c.c. The diverging ridges.
- d. Edge of mouth with frilled membrane.
- e. Interior of pharynx.
- f. Cut edge of body, opened by a median ventral incision.

The general characteristics of the leech indicate that the complete somite is composed of five annuli. As no segmental papillae or nephridial pores can be detected [owing to immersion in alcohol?] it is impossible to determine this point with certainty from external examination.

The crop, which was not fully investigated posteriorly, has paired caeca like *Hirudo*.

The blood is red.

The pharynx is long and plicated as in *Aulastoma*, Moquin Tandon. In the largest specimen these plications or folds are indistinct; in the second specimen twelve, equal, longitudinal plications were clearly seen.

The ventral side of the anterior sucker is bounded anteriorly by a deeply wrinkled lip with an inner crenulate border. From a median point slightly behind this border, two ridges diverge posteriorly, dividing the hollow, ventral surface of the sucker into three depressions and forming a triangle with the edge of the mouth, which appears as a transverse ridge in individuals laid open by a median, ventral incision as shown in Fig. 5. The depressions within and without this triangle vary considerably in form according to the amount of stretching to which the individual is subjected, a fact which may account, to some extent, for the conflicting descriptions of similar features in other leeches.

The ridge formed by the edge of the mouth is extended posteriorly into a frilled membrane overhanging the ends of the pharyngeal plications and beneath it the maxillae, if present, should be found.

Although the above diagnostic characters are not complete, it is evident that Dr Wellman's leech is one of the *Gnathobdellidae*, a group which Dr R. Blanchard divides into the two sub-families *Hirudininae* and *Haemadipsinae*.

The presence of a ring between the third and fourth pairs of eyes is sufficient to separate this leech from the *Haemadipsinae* or true land leeches, and it therefore must be placed in the first sub-family.

The same authority assigns to the *Hirudininae* the following genera, viz., *Hirudo*, *Haemopsis* [= *Aulastoma*, Moquin Tandon], *Limnatis*, *Hirudinaria*, *Macrobodella*, *Whitmania* and *Limnobdella*.

This leech differs, amongst other characters, from *Hirudo* in the absence of the three powerful jaws; from *Haemopsis* [= *Aulastoma*, M.T.] in the form of the crop; from *Hirudinaria* and *Macrobodella* in the number of rings separating the genital apertures. I am unable to speak positively with regard to *Limnobdella* and *Whitmania* as I have been unable to analyse somites VI and XXIII owing to the absence of segmental papillae. Taking everything into consideration I venture to place Dr Wellman's leech in the genus *Limnatis* which it appears to resemble most closely. In particular, Dr Blanchard's description of the anterior sucker of *Limnatis* as "creusée d'un sillon en dessous" and Moquin-Tandon's description of the same as "profondément creusée en dessous d'un canal en triangle" seem to agree with the characters shown in Fig. 5.

[N.B. It is to be noted that Professor Blanchard agrees with Leuckhart, Whitman and Apáthy in rejecting *Haemopsis*, Moquin Tandon, 1846, as unworthy of generic rank.

He substitutes *Haemopsis*, Savigny, 1817 for *Aulastoma*, Moquin Tandon, 1826; and *Aulastoma gulo*, Moquin Tandon, 1846, becomes *Haemopsis sanguisuga*, Bergmann, 1757.]

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